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CASUALTIES OF CIVILIZATION

MAN is probably the most adaptable of animals. His astonishing ability to adjust to his environment or bend it to his needs enables him to thrive in tropic heat or arctic cold. But he is not so successful in his control of the inner world of the emotions.

A thought, a word, a gesture, can create a flurry of emotion that instantaneously involves unseen but complex bodily changes. Digestion may be arrested, pulse rate and blood pressure raised, the distribution and chemical constitution of the blood markedly altered, and the rate of combustion increased. In an instant a thriver has become a striver. Of course these reactions prepare man for fight or flight and are therefore physiologically sound ; but if the emotion persists the bodily changes persist also, and in time may become irreversible.

The most damaging emotion is anxiety. And unfortunately it is exactly the emotion most frequently aroused in our society, and the one most likely to persist. As man has been compelled to interact with more and more people on an emotionally competitive basis his chances to inflict and receive emotional hurt have mounted. Industrial specialization and social stratification have meant that other human beings have become an increasingly important source of frustration and anxiety.

Anxiety creates havoc in those who are susceptible by constitution or training and produces such diseases of civilization as high blood pressure and peptic ulcer. There is little doubt that the emotional stresses of modern life kill more than one hundred thousand people in this country each year and damage the health, happiness and efficiency of countless thousands.

We have gone far towards mastering or modifying our natural environment, but we have gained little mastery over the inner life of the mind. Here is a double challenge we cannot ignore: a challenge to help our children to develop rational control of their emotions from their earliest years, and to develop, stage by stage, a social and economic structure that will be scientifically adapted to man's emotional needs.

Hlth. Educ. J., 1946, 4, 2–3

HEALTH EDUCATION*

By The Right Hon. Lord Woolton, P.C., C.H., D.L., LL.D., *President of the Central Council for Health Education.*

In 1910 I chanced to attend a meeting of what were called 'Old Girls' of a school of which I was a manager in a poor district of Liverpool. Age is a relative thing, and the term 'old girl' may be a complete misnomer, since you may be an 'old girl' and still be very young.

But the thing that impressed me about these people—who, I suppose, were not much more than ten years older than I was at the time—was the fact that they looked old ; and many of them were suffering from various forms of ill-health, which they accepted as part of the human lot, and particularly of the lot of women. I wondered if it was necessary, and I wondered still more where anyone would begin if they sought to alter either the state of ill-health or the patient acceptance of it. I came to the conclusion that perhaps food had something to do with it, and perhaps teeth might make a reasonable starting-point for reform.

Lessons from the Past

That was the beginning of my interest in this positive approach to good health, which is the ideal that binds us together. Perhaps on my first meeting with you, you will forgive me if by way, perhaps, of supporting your choice of me as President, I indulge in a little reminiscence, for it is from the experience of the past that we can draw our encouragement for the future.

In 1910, in association with a few friends, I started in Liverpool a dental clinic for school children. It was not the first in the country, I was annoyed to find—because I liked the feeling of being a pioneer—someone at Cambridge had already started one. But I think it was the second.

We had our own dentist : we not only treated children for toothache, but we embarked on a course of dental education for parents as well as for children, with the result that within two years there was not a family of a scholar in that school which was not interested in teeth. It became a fashion. We had parents' meetings to discuss teeth, and their uses and abuses. In fact, as a result of the enthusiasm of the teachers, the dentist, and a group of voluntary workers, we made great progress on what might have been regarded as most unfruitful soil. At the end of two years, when I decided that voluntary effort was no longer going to be

**Presidential address to The Central Council for Health Education, delivered on October 18, 1945.*

able to cope with this problem, and closed the clinic, there were such protests from that very poor neighbourhood that the City Council was compelled to take over the work that I had abandoned—just a month before the November elections! So dental clinics became established all over Liverpool—although not, I'm bound to say, with the same spirit of enthusiasm that had enlightened this voluntary effort.

In 1916 my wife decided that it was time that a pre-natal clinic should be established in the same district, and so, with the help of a few friends, she established one—again with voluntary workers, but with professional people being paid a reasonable fee.

Willingness to Learn

I mention this because we learned a great deal from it. We restricted the work to people within a prescribed area, of which we had at any rate approximate figures of the death rate due to infant mortality, and we kept a statistical record. The death rate of children attending our clinic was one-third of that general in the neighbourhood. From the accounts that I received of the working of the clinic, I was equally impressed by the ignorance of the mothers and by their willingness to learn. And I was greatly impressed by the troubles that women, during the last war, had endured in seeking to sustain the health of their children.

Within a few years, public opinion in Liverpool had persuaded the Health Committee that efforts of this nature could not properly be left to the sporadic emergence of philanthropy, but were part of the medical service of any city.

At some future time I would like to tell you of another pioneer enterprise in which I was engaged in the use of the psycho-therapist in an industrial organization. To-day I want to draw a picture of the development that has taken place in our attitude to the promotion of physical health, largely, I think, as a result of the action of Government, in the creation of maternity and child welfare centres, which have steadily increased, so that, at the present time, there are about 6,400 in England and Wales. How profitable they have been. The death rate of infants under the age of one year has fallen from 95 per 1,000 in 1912 to 49 per 1,000 in 1942.

The number of deaths of women in pregnancy and childbirth in the year 1912 was 3,629, in 1942 had fallen to 1,669.

In 1944, the infant mortality rate and still-birth rate, which are regarded as the most delicate index of health conditions, were the lowest in our recorded history.

Don't let us rest on any laurels. Each year we lose in industry in England and Wales an average of 40 million weeks a year, due to sickness absenteeism. Last year we lost 55,000 babies because they were born dead

or died during the first year of life. Each year we have 600,000 cases of notifiable infectious diseases. Each year 10,000 children and young adults are killed by rheumatic heart disease, and some 200,000 are left alive but crippled. Investigation at the Peckham Health Centre showed that 15 out of 16 people of all ages were suffering from some physical defect, and only 1 out of every 11 with serious organic diseases was attending a doctor.

Now there is a picture of gloom, of personal unhappiness, of industrial incapacity: but whether we look at this problem from the humanitarian and philanthropic standpoint of the prevention of unhappiness and suffering, or whether we look at it from the cold economic aspect of a nation greatly impoverished by war, there remains the problem of major importance to those who are interested and are concerned with reconstruction.

Reason for Hope

I see much reason for hope. The social insurance scheme of legislation, with the drafting of which I was concerned last year, will do much to provide the means of attacking this problem. The Family Allowances Bill, with its accompaniment of school feeding on a national scale, will probably be the most immediate weapon in our hands. But these instruments of Government, however generously they may be planned, will not be enough to deal with the problem unless we combine with them widespread education as to how they can be used.

We have a great work to do that covers a wide field, and I should like to see it developed along the lines of a considered programme that will gain in strength as its achievements become known and its benefits are made obvious. Where shall we begin ?

The Foundation of National Strength

You will not be surprised if I suggest to you that the foundation of national strength begins in the proper feeding of babies, both post-natal and ante-natal. When I became Minister of Food, with the somewhat difficult task of maintaining the nation's health and morale through a period of inevitably diminishing supplies, I made one firm resolve. I determined that the children of the nation should not suffer from malnutrition because of the war, and I deliberately organized the supply of those foods that were essential for this purpose. Nothing has given me a greater satisfaction than to know that after these six difficult years the health of the children of this country is unimpaired. In fact, I believe that is an understatement—and that they are stronger and healthier than they were before the war. Those steps that we took in war must remain in peace ; the instruments of Government that made them

effective were of a temporary nature, effected under the powers given by Parliament to Ministers during wartime. I call on this Government to make it effective for all time. The supplies of milk, orange juice, cod liver oil to nursing mothers and to children must become a part of our national system of preventive medicine. I hope there will be no failure of supplies. Orange juice and cod liver oil are not things that are grown in this country; particularly for orange juice we are dependent upon other countries.

During the war we were very greatly dependent upon the United States of America. I know the difficulties that face the Chancellor of the Exchequer in obtaining supplies of dollars. The babies of this country are much indebted for their present health to the United States of America for the supplies of orange juice which they sent to us during the war. Whatever may be the difficulties of exchange, I am sure that the people of the United States, knowing the great sacrifices of life that the people of this country made during the war, will not withhold the supplies of orange juice for the children of this country.

The health of babies is of more importance than dollars.

Pride of Motherhood

There has, during the course of the last few years, been a great renaissance in the pride of motherhood in this country. It is our business as the Central Council for Health Education to stimulate that pride and to inflame it. The rearing of healthy children we recognize as the greatest service that the women of this country can undertake. The instruments are to our hand, and I appeal for both municipal enterprise and voluntary organizations to seek out the means whereby this end may be achieved. Here, indeed, is scope for voluntary effort, and it is through that human understanding and encouragement that this work can progress.

Voluntary organizations have done magnificent work during the war, particularly those organizations that have been mainly run by women. I know that they are looking for further service that they can render in peace time, and I hope that the forces of the Red Cross Society, the Order of St. John, with the Women's Voluntary Service organizations, will consider what they can do towards helping and encouraging and educating women in the task of rearing healthy children. Much of the effort may be localized and indeed almost unknown.

I remember being greatly impressed during the war by a visit that I made, at the request of Earl Winterton, to the Soho Hospital for Women; I found while women were waiting to see the doctor an informal and most instructive series of talks and demonstrations being conducted by those connected with the hospital, into the elementary

science of food values for children. I should like to see the same sort of thing happen in every baby clinic, in every hospital in the country.

Our recent history has shown that, in spite of the difficulties of this war, women who have looked after children are willing to learn if the means of education are provided. Scientific knowledge is developing at a much greater rate than the mass of the people have been able to absorb. It is our business to teach them the use of these new discoveries.

Unnecessary Diphtheria Deaths

It is but a few years ago that diphtheria was one of the horrors of parents whose children were attending schools. Scientific knowledge has reduced this danger. Children can be rendered immune to it, and yet, in spite of the propaganda that has taken place, almost 50 per cent of the children of this country have not yet been protected from this danger. I do not for one moment believe that this is due to indifference on the part of parents. It is due to ignorance. A thousand children die every year because of it, and it is our business speedily to convince the parents of the 50 per cent that are not protected, of the unnecessary danger which they are allowing their children to run.

The Social Insurance proposals, which we worked out in the Coalition Government and which the country eagerly awaits in their legislative form, will place a medical and consultant service at the disposal of all people without regard to their capacity to pay. The doctor's bill will no longer be a hindrance to seeking medical advice. The medical skill of the country will be able to do its proper work of fostering good health rather than treating ill-health. It will cost us a good deal of money, but I know of no public expenditure properly used that is likely to be more nationally economical than expenditure designed to create a healthy nation. For a nation that is spending at the present time over £30,000,000 per annum for patent medicine is surely ready for professional and expert education.

It will take a long time before we can convince the people of this country that a large amount of their illness is preventable, and there are not a few who derive some mental satisfaction from the sympathy that they receive in illness: not a few rejoice in the feeling of heroism, going about their work nobly suffering from minor ailments. We should improve our national health very greatly, if people suffering from a common cold regarded themselves as a public danger instead of patient heroes in adversity.

We need a new social standard whereby people take pride in vigorous health and recognize that when they are below par they are under a social obligation to look at their way of living and of eating—maybe, of drinking—and ask themselves whether their illness is really necessary,

and whether they are fulfilling their obligations as citizens in such conditions.

The New Outlook on Health

That's the new outlook on health. We are passing from the old concern for the treatment of established diseases and the prevention of infection to concerning ourselves with the prevention of defects and to those measures that will encourage the highest mental and physical health and development open to the individual.

I hope that Miss Wilkinson, the new Minister of Education, whom I know to be greatly concerned with these problems, is going to help. We have spent so much time in our schools in educating the intellect of the nation, particularly in our secondary schools. Children have become so knowledgable about so many things, yet, strangely, whilst we have been educating their sound minds, we have forgotten to teach them how to have sound bodies. Is it not possible, both for boys and for girls, to find room in the school curriculum—even at the sacrifice, perhaps, of some erudition—for some elementary education and training in the rules and the habits of good health?

I believe that in the organizations that are no longer to be called 'Young People's Colleges'—although their precise name escapes me now—physical instruction is to be given. I am sure it is very important, but I would like physical training to be combined with health education —and they are not the same thing.

Proper Feeding

I would like to see, especially in the education of girls, some provision made for the teaching of food values, and I hope that local authorities will put this teaching into practice in the provision of school meals for children. *Mass cooking is not always good cooking,* and proper feeding for children does not consist only in filling their stomachs: the sort of food that children need is not the same as the food adults need. That is where, as a result of the proper administration of school feeding, we have the chance of greatly improving the child health of the nation.

I should like to make an appeal to industrialists who now, I am glad to see, have works' canteens as an almost universal practice, to look at the food values in their canteens—and not in terms of money, but in terms of the real value of the food for sustaining and promoting the health of the people who are eating it.

But, of course, the place where this improvement ought to begin is in hospitals. I recently caused an inquiry to be made into the dietetic values of the food supplied to nurses. There is a place for reform, right on the doorstep of the knowledgable medical profession.

I believe that all good hospitals now have a dietitian on their staff. It is a pity to limit the skill of the dietitian to prescribing meals for the sick, and I should like to think that, through our great hospitals, every patient received advice as to how to use food to maintain themselves in good health when they had ceased to suffer from the particular inconvenience that caused them to be patients in hospitals. There, indeed, is a place for the beginning of the teaching of health, for the minds of people who have been suffering are particularly prone to absorb advice, and, in a period of convalescence, they have time to ruminate on their past failures and to plan more intelligent living for the future, if someone will give them the knowledge as to how to do it.

The Aims of Health Education

These are some of the prospects that are ahead of us. If I were to summarize the work of health education I should say that it should aim at producing for the individual :

(1) A new attitude towards health, which is no longer content merely to be not ill, but strives to achieve a state of positive, abounding health.

(2) A new sense of responsibility for the health of the community and for the health of oneself and one's family.

(3) Habits of life which have become part of one's self and which govern the actions which affect one's own health and the health of one's neighbours.

(4) A knowledge of

  (i) one's body and the workings and the needs of one's body and one's mind ;

  (ii) the social forces at work upon the community and the individual and the means by which they can be controlled by the community and the individual ;

  (iii) the way that infectious diseases attack us and how their attack can be prevented, or, if it cannot be prevented, how the body can be prepared to resist it more successfully.

And finally, and fundamentally, a great extension of the knowledge of mothercraft, and of all the means that are available for the creation and preservation of the health of children.

I believe that this Central Council for Health Education can do much to promote these ends. I believe the nation is ready for such education, and I call upon you for a vigorous and persistent effort to promoting these beneficent ends.

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SOCIAL FACTORS AND MENTAL HEALTH*—I. INTRODUCTION

By Kate Friedlander, M.D., D.P.M., *Hon. Psychiatrist, Institute for the Scientific Treatment of Delinquency.*

The conception of 'mental health' is difficult to define, as it is fluid and can only be ascertained in relation to a given environment. There is no clear-cut division between mentally healthy and mentally ill people; the one goes over imperceptibly into the other and the difference is a quantitative rather than a qualitative one. We are inclined to call a person unstable who has to change his job every two or three months because working conditions are never quite favourable enough, but we would, on the other hand, believe that a soldier who is in a state of anxiety after weeks of intensive battle experience may nevertheless be stable under more normal conditions. Although we expect mentally healthy people to be able to adapt themselves to a changing environment to a certain extent, severe environmental strain exerted over a long period of time may lead to a breakdown in people formerly perfectly stable.

Another consideration will lead us once more to the environment as intimately connected with our conception of mental health. A primitive man suddenly transplanted into our Western civilization without the possibility of adaptation might impress us as suffering from a mental illness. Taboos, perfectly natural in his civilization, such as a taboo to eat in the company of others, would make him immediately conspicuous at least as a very queer person.

With these restrictions in mind we could define mental health as the ability of an individual to use his capacities to the best advantage of himself and the community, the ability to enjoy life, and the ability to adapt himself without lasting mental disturbances to changes in the environment which the majority of individuals living in the same civilization can stand.

We can already perceive that the environment exerts an important influence on the stability of the mind. But it is, of course, not the only factor which has a decisive bearing on mental health.

There are illnesses of the mind which are caused by organic or functional changes in the brain, such as, for example, mental derangement due to general paralysis, to senile dementia, to a tumour of the brain, or to epilepsy. In such illnesses the environment has very little bearing on the outbreak of the illness or the form it takes.

*The first of a series of four articles by Dr. Friedlander.

Innate Trends

The individual brings with him into the world inherited qualities of his mind. Intelligence is innate, and so is the strength or weakness of instinctive drives, certain abilities, and, occasionally, the predisposition to mental illness. We call the sum total of these inherited characteristics the constitution. According to the present stage of our knowledge we believe that in psychotic illnesses as the schizophrenias and the affective psychoses, constitutional factors outweigh environmental factors in the causation of the illness. We are also inclined to believe that innate trends may play a large part in the development of the so-called psychopathic personalities.

Excluding these groups of mental disturbances in which organic and constitutional factors predominate in causation over environmental factors, we are still left with a numerically by far larger group of people whose mental balance is disturbed in a variety of ways ; in these cases neither constitutional nor physical factors can be held responsible for their incapacity to enjoy life and the difficulties they encounter in their work. These mental disturbances which, as will be shown, are caused by adversities in the environment in its widest sense have often been called *social illnesses.*

Neurotic Disturbances

The general practitioner and the staff of a busy out-patients department of a hospital are sometimes irritated with patients who, though they do not show any sign of organic illness, seem to suffer intensely. They often complain of bodily symptoms like headaches, difficulty in swallowing, pains in other parts of their body, or even the paralysis of a limb. Usually they do not react to medicine, and demand the attention of the doctor more than organically ill people. In former times these *hysterical* patients were considered to be malingerers until, with the advent of modern psychology, the profession and the public could be convinced that these people are not able to change their behaviour at will and that they themselves suffer at least as much as they make their environment suffer.

There are other people who are forced to think thoughts which are abhorrent to them, such as thoughts of killing their nearest relative or of acting in a way which seems ridiculous to them, but which they are nevertheless unable to stop. They may wash their hands from morning till night to the exclusion of any other activity, imagining them to be dirty ; or they may be compelled to touch certain objects, to turn round in the street for no apparent reason ; they may have to repeat their prayers at night a hundred times or more because every time they have nearly finished blasphemous thoughts disturb them. We can observe in ourselves one or the other compulsion, or superstitions which come near to

compulsions, such as touching wood ; but these little habits do not usually disturb our everyday activities ; it is only when these actions and thoughts invade the daily life and occupy the mind of the person to the detriment of his activities and his capactiy for enjoyment that we talk of an *obsessional neurosis*.

Apart from these two well-defined neurotic illnesses, *hysteria* and *obsessional neurosis*, we find numerous other disturbances of mental life which sap the energy of people. Difficulties in concentration may severely disturb the working capacity; unsatisfactory sexual relationships may cause unhappiness in married life ; disturbances of mood and character difficulties may endanger both working capacity and personal relationships.

Anti-Social Behaviour

Although from what has been said up till now it may not seem apparent that neurotic disturbances are closely related to environmental influence, there does not seem to be any doubt in the mind of the lay public that criminality is closely related to an unsatisfactory environment. Statistical research has shown that there is a correlation between the incidence of delinquency and certain environmental factors such as poverty, a broken home, defective discipline, and so on, but statistics have so far failed to explain why only a minority of people react with anti-social behaviour to these specific adverse environmental influences.

Discoveries of Modern Psychological Research

During the Middle Ages hysterical women were burned as witches. This, to our mind, cruel treatment later gave way to moral indignation at the ' weakness of character ' of neurotic people. So far as anti-social behaviour is concerned this attitude is still prevalent among the majority of the lay public, whilst modern psychological research has already to a large extent been able to dispel the stigma formerly attached to neurosis.

The scientific study of neurotic illnesses which began towards the end of the last century led to far-reaching results, especially since Freud's discovery of the unconscious mind. This discovery enabled Freud, and psychiatrists and psychologists since then, to understand the meaning of neurotic symptoms and to follow them back to their origin. It is by way of psycho-analytical research mainly that we were put in the position to relate certain happenings in the mind to specific influences of the environment.

A first step towards the disentanglement of the causation of neurotic symptoms was taken when it was seen that they very often dated back to an occurrence in the external life of the afflicted person. It is already common knowledge that an unhappy love affair or the death of a near

relative may lead to a ' nervous breakdown,' but very often the external event which coincides in time with the outbreak of the neurotic illness seems to be of much less import. It is not obvious why a man should start to drink after his tonsils have been removed or why a woman should develop a disphagia after an electric bulb has exploded near her without hurting her. Even when the recent events related to the outbreak of the illness are obviously upsetting to the individual, it is not clear why some people should react to them with a lasting disturbance of their mental equilibrium, whilst others are able to regain their mental balance after a shorter or a longer time.

Further research into the individual histories of neurotically ill people, employing a method which enables the psychiatrist to understand the unconscious as well as the conscious motivation of behaviour, invariably showed that the disturbance had not been *caused* by the recent event, but had been made *manifest* by it. In many cases where neurotic symptom formation occurred after an event in the adult's life it appears that the same or similar symptoms had shown themselves on earlier occasions and had disappeared again. It could furthermore be seen that solely those events which had some bearing on the earlier personal history of the patient were able to produce neurotic symptoms in adult life.

Damaging Experiences

An accumulation of facts gained by this kind of research showed that for certain reasons, which will be explained later, environmental influences exerted on the growing mind of the child during the earliest periods of life are apt to cause conditions which predispose to later neurotic illness. So-called traumatic experiences during the first years of life attracted attention at first, but, in time, it appeared more probable that an adverse environment exerting an influence on the maturing child over a longer period of time was more to blame. An attitude of the parents, for instance, which, by causing severe anxiety in the child, leads to repression of conflicts, seemed to be more important than, let us say, a single shock, like falling from a height.

Broadly speaking, it could be ascertained that environmental factors which interfered with the child's relationship with his mother and with other members of the family during the first five years of life seemed to be causative factors in the development of later neurotic disturbances, whilst the environmental influences of the wider surroundings did not influence the child directly. Poverty, for instance, does in itself impress the small child very little, but it may become important in so far as it interferes with the mother's relationship with her baby. From all the data which were collected during the war it is rather evident that evacuation, especially if it entailed separation from the mother, caused far

more disturbances in children than did air raids or other severe external dangers.

Our Task

The reason why certain environmental factors, impressing the individual during the first years of life, have this immense power, is to be seen in the fact that the child is not born with the structure of the mind as we know it in the adult. During the first years of life the child's mind passes through certain phases of development which, in a favourable environment, lead to social adaptation. The child is born with primitive instinctive urges, some of which are anti-social in nature. The personality as we know it in the adult is built up within the struggle between the wish of the child to satisfy these primitive instinctive desires and the demands of the external world, represented primarily by the mother and the family group, to forgo satisfaction on many occasions. The task of the child's early environment is to guide the energy behind these primitive instinctive drives into socially accepted channels. Whether this task is satisfactorily fulfilled depends to some extent on the child's constitution and to a much larger degree on environmental influences.

The aim of these articles is to show the influence of social factors on the mental health of the individual. In order to be able to evaluate the importance of certain environmental influences as compared with others, it will be necessary to scrutinize more closely the emotional development of the child up to maturity and to correlate its specific social factors. Only in this way shall we be able to show the kind of environment which will lead to mental health and to point to those environmental influences which predispose to neurotic illness and anti-social behaviour.

It will be convenient to distinguish three periods in the child's maturation : (1) early infancy up to the fifth or sixth year ; (2) the latency period from the sixth to roughly the twelfth year ; and (3) puberty. According to the differences in the emotional development during these three periods, specific social factors play an important part in each stage.

BIOGRAPHICAL NOTE

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HYGIENE OF THE BODY

By Lindsey W. Batten, M.B., M.R.C.P.

The word 'hygiene' comes from the Greek—significantly, for not the name only but the thing itself was born in Athens. "To the Greeks," says Lowes Dickinson, "a good body was the necessary correlative of a good soul." Moreover, with their clear eyes they saw that there is in health something of the divine and magical which they personified as a goddess, Hygiea. To us hygiene means, I suppose, the care and maintenance of the structurally normal body. There are special hygienes, as of infancy, pregnancy and age, but our immediate concern is with the hygiene to be taught to our present English children—a hygiene that they may learn, practise and continue to use throughout their active lives. It is the art of keeping fit—and the question at once arises, "fit for what?"

Fit for What?

For what conditions should we try to fit them? What, in these conditions, are they to be fit to do? Both questions are pertinent, insistent, unescapable, but never was there a time when they were harder to answer. I must assume, for present purposes, that we go on; that for a generation at least Western civilisation neither destroys itself with atomic bombs nor puts its despairing head in the contraceptive gas-oven. I must assume that we worry through these next forbidding years of poverty, toil, disillusionment and readjustment and, as it were, go on from 1939. What, on these rather large assumptions, is the prospect for the next generation? It is one of more generally diffused material comfort than ever before, with machines increasingly dominating every human activity so that there is less and less need for strength and skill of body whether for work in or outside the home or for amusement, an era in which it will be easier and easier for the average citizen to remain alive for 70 years without once exerting his full strength, without acquiring any kind of dexterity or skill of hand or eye and yet to have the illusion and reputation of being alive and well. We are already a long way on this road and what I find alarming is that almost all my fellow-citizens seem to see paradise at the end of it, whereas I see a desert.

Another trend of which there is ample evidence is the change in the character and incidence of the ailments which most commonly trouble us. For some twenty or thirty years now the acute infections, the lively, dramatic, killing diseases, have been on the wane, becoming both milder and rarer; while the functional or half functional 'psychosomatic disorders' have become commoner and perhaps more severe. There is less and milder pneumonia and rheumatic fever, milder scarlet fever, milder and, until this

war, less frequent tuberculosis; but far more duodenal ulcer and probably more toxic goitre, high blood-pressure, 'fibrositis' and the vaguer kinds of rheumatism, neuroses of every kind and perhaps insanity. There is, and presumably will continue to be, less untimely death, less acute disease, longer life; but more disorder, bodily maladjustment, functional disharmony. Despite all we have gained in diminution of frank organic disease, it is perhaps doubtful whether there is any large increase of first class health among us and still more doubtful if there will be any further increase unless we mend our ways.

Inducement to Fitness

With this prospect, as it seems, before him, what are we to teach the Child of our Time?

First—first in order and far first in importance—we must give him some convincing reason, some effective inducement to be well. Every practising doctor and indeed every clear-headed and observant citizen must know that large numbers, probably a majority, of our present urban population do not desire for themselves or even for their children 100 per cent health. Many have no experience or vision of the thing, and many more are not prepared to pay either the purchase price in terms, for example, of visits to the dentist, unfashionable shoes, less tobacco, spirits, tea or food, more exertion or ventilation, more sleep at the expense of amusement; or to face the permanent cost in terms of fitness for a full day's hard work and renunciation of the sympathy and privileges assigned by a tolerant and kindly community to the 'not very strong.' To pretend otherwise is self-deception or hypocrisy of a dangerous kind. We shall be half way to having the 'positive health' we talk so much about if we can raise a generation who shall see it as clearly and desire it as deeply as at present they see and desire, let us say, the motor car they one day hope to possess or drive.

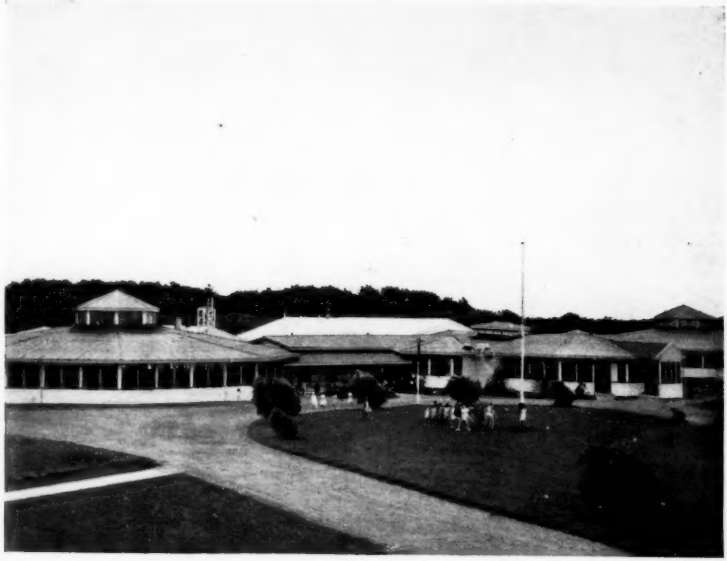
What, then, in England to-day, are the possible incentives to seeking full health which we can put before the young?

There is first the mystical, the Athenian incentive—the belief that the healthy body is a part of that good-and-beautiful which it should be man's chief delight and duty to seek and express. A modern parallel is the belief or feeling that a well designed and well made machine deserves a corresponding care in its use and maintenance; that to neglect it, to let it rust, to leave grit in moving parts, to starve it of oil, is to commit a crime, to do something wrong, to offend, as it were, the god in the machine. If we can induce a boy to transfer to his own body something of the respect and devotion he manifestly feels for the wireless set he has made or the motor cycle he rides we shall have implanted a very durable incentive to personal hygiene.

Next there is the sensuous incentive—the conception of the healthy body as a source of pleasure, as something to use and enjoy. "Rejoice, O

young man, in thy youth." It is distressing to think how many know nothing of struggling with a wind, breasting a great hill, outlasting long miles; of the cold plunge into sea or river out of broiling sun, of the fireside after stinging cold, of the loosened muscles tired out by full exertion, of athletic skill and achievement, of dancing or singing 'all out,' of getting soaked through by summer rain, or even of the quieter daily satisfaction of biting and chewing with good teeth, digesting with a good stomach and sleeping with a brain and body that have learned how to relax. Perhaps the Pauline doctrine of unceasing war between the flesh and the spirit still makes us shy of publicly recognising and encouraging bodily pleasures, or perhaps it is that cursed motto 'safety first,' but a mere glance at many of our children—especially as the doctor sees them at medical examinations, standing before him spineless and apathetic—shows how completely absent from the content of their minds is the conception of the healthy body as a source of fun. Much of what they should know can be learned only in the country and there is a crying need for camps, but a start could be made in the classroom and the school playground and even in the home. Can we not induce young mothers and fathers to play with their toddling infants, to swing, chase, hoist and roll them about, renewing their own youth while they do it? Is it permanently impossible for the English to dance like the Scots or sing like the Welsh? Must we do everything at half cock for fear of 'straining' young hearts known to be quite unstrainable or for terror of being responsible for a broken collar-bone or a sprained ankle? If, indeed, we must, let us at least stop prating about 'positive health.' We cannot have it on these terms.

Third, and possibly more attuned to the spirit of the age, is the civic motive—Sir William Beveridge's 'duty of the citizen to be well' which he postulates as the necessary counterpart of the sickness benefits he proposes. Here the Spartans in ancient times, the Germans and Japanese yesterday, and perhaps the Russians to-day are our exemplars. The good Spartan or the good German must be strong and well to serve his fatherland and he does it, but at a heavy cost in freedom, variety, humanity and tolerance. He does it solemnly, be he Spartan or German, and the Athenians and an earlier generation of Englishmen thought him a funny sight. Perhaps even the late Fuehrer, with his 'strength through joy' movement, thought the solemnity overdone. But the Spartans beat the Athenians, the Germans had the better of us all for three full years, and if individualism is clean out of date and our sense of what is funny has changed perhaps we had better urge the health-for-citizenship motive on our possibly receptive youth as strongly as we can. If our young men or women will not seek full health because it is good and seemly or because it is fun, they had better do it because it is their duty. Indisputably it *is* their duty and, to put it on its lowest terms, neither a policy of full employment nor a comprehensive



Otaki Health Camp, Wellington Province, New Zealand.

(*See article on page 26*)

Outdoor activities at the Otaki Health Camp.

(*See article on page 26*)

medical service will make the Beveridge sick benefits a possibility unless the citizen does accept and take to heart 'the duty to be well.'

Lastly, there is little doubt that some men and women practise an admirable personal hygiene for no conscious reason at all but because they caught the habit young and cannot lightly drop it, so that perhaps the best thing to do for some of the least imaginative and thoughtful of our young if we have them under control, is to make them live healthily because they are told to and to hope the habit will stick.

Rules of Healthy Living

But how, in any case, are they to live the health-provoking life? What is this personal hygiene? Of course it is no new thing. I doubt if there is any point of practice in which we could instruct a well-brought-up Athenian of 400 B.C. and I am sure there are many in which he could instruct most of us. All our modern science has done is to give validity in terms of chemistry, physics and physiology to rules of life known to enlightened men for many centuries. Even now we know, for the most part, what we ought to do but partly we are enmeshed in a civilisation which makes it hard or impossible to do it and partly we are not prepared to make the effort or pay the price. Personal hygiene falls naturally into familiar provinces—surroundings, clothes, cleanliness, food and drink, excretion, activity, sleep and rest. A few points about each must here suffice.

Blessed Solitude

The love of contiguity is perhaps the worst hygienic sin of the mass of town dwellers. Inside or outside their houses, in motor cars on the Portsmouth Road, at dog races, horse races and seaside they keep close company. "The more we are together, the merrier we shall be." They shun the unfrequented regions both of the country and of the town. "*O beata solitudo! O sola beatitudo!*" is not for them.

The sin *is* a sin because the crowd, big or little, spreads infection, especially the all-pervading respiratory infections; because it is impossible for one in a crowd either to use his limbs or to express or develop his personality, and because a community which at bottom loves contiguity will never demand or obtain the space which is the first hygienic virtue of a physical environment. It is space in our houses, our schools and our towns, space to move, to breathe and to lead individual lives that we must make and get if healthy citizens are to multiply and not to diminish among us. Those of us who find solitude blessed may well be thankful that in this small island most of our fellows find it odious, but unquestionably if we are teaching hygiene it is our duty to incite the young to scatter, to spread themselves thin, to feel the unhealthiness of a crowd wherever they find it, to demand space and, best of all, to go back to work in the fields where space is and remake at once their own lives and the English countryside.

Clothes are only a little personal house and what is true of the larger environment is true of them. The child who has learned to dislike the confinement of the crowd and of the small and over-furnished house or room will almost automatically dislike, as he should, the confinement of excessive and constricting clothes—the thick vest, shirt and waistcoat hugged to the body by a jersey with a jacket to cover the lot, rarer, much, than it was, but still too often seen. Somewhere about 1912 the young women of these islands threw away their corsets, shortened their skirts and cast off their collars—"a perfect orgy of undressing is going on," said a *Times* leader-writer of the period. Pneumonia was confidently prophesied for them but instead they ceased to have chlorosis, the green-sickness anaemia of growing girls, and their health has never looked back. And it is noteworthy that the reform was not made in the name of hygiene but expressed the desire of an emancipated generation to enjoy and show off their freedom. But though they lead in clothes, women are behind men in shoes to match the feet and here much remains to be done. Girls, as well as their mothers, will watch with quite oriental complacency the distortion of their feet and the multiplication of corns in the interests of a 'smart appearance' in shoes. Only a new respect for feet will induce the shoemakers to remodel their lasts and only a generation of children with still undistorted feet can be taught this respect.

Other Virtues

Of cleanliness not very much need be said. Though some cannot and many do not practise it most of our citizens know what it is. Only the finer points are unrecognised, notably the extent to which hands can and do convey infection. There is a popular impression that infection spreads only through the air and few appreciate the virtues of soap and water as an alternative to chemical antiseptics.

Enough and to spare has been said and written about nutrition in the last few years, but less about eating habits. The first hygienic virtue in the matter of food is to have no fads but to enjoy all wholesome foods; and others are to enjoy biting, to shun bolting, to observe meal times and not to eat largely when tired.

Much, far too much, has also been written and said about excretion, and the amount of superstition centring on the function of the bowels is astonishing and very discreditable. Large numbers of citizens of every social grade believe, on the one hand, that the large bowel is a reservoir of poison which cannot be emptied too often and must on no account be allowed to rest; while on the other hand, if suitably stimulated, this same organ will collect the circulating poisons from all over the body, like an assistant kidney, and cast them out. The truth, so far as we know it, is that the large intestine exists to solidify, by absorption of water, the residues

passed on to it by the small intestine and by occasional mass movements at intervals more or less regular but diverging widely between individuals, to pass out its solidified contents. So long as its walls are healthy it does not absorb poisons and in no circumstances does it secrete them from the blood. If its contents become very hard and bulky they will be difficult to expel but this cannot lead to a real intestinal obstruction. If this simple and comforting piece of physiology were generally believed and understood; if we could get young people to have as much faith in their bowels as they commonly have in their hearts, lungs and bladders, and if we could make it generally convenient for them to withdraw for a bowel action when they feel the need, 'constipation' might drop out of our vocabulary of diseases and our national drug bill be vastly reduced.

Exercise and Rest

Activity of some kind is, at least for most of us, at once the purpose and the justification of our lives, and all our other organs can be looked upon as mechanisms to empower the muscles, great and small, to carry out purposeful movements. Training in and for activity is therefore a large part of hygiene and something has already been said about it. I only wish here to make a plea for creative as opposed to the non-creative activity—the exercise which is merely 'an exercise.'

It is, I suggest, a tragic thing to have eliminated creative exercise so completely from many people's lives that we must broadcast music and instructions for bedroom gymnastics to keep their limbs in action at all, and must rediscover the healing virtues of creative manual work and deal it out to those starved of it by the machines in the guise of 'occupational therapy.' If it is not tragic it is comic. Games have their uses but they are mainly for the young and agile, they demand more space and apparatus than can ever be available for the bulk of our people and even the young do not always like them. Dancing worthy of the name can perhaps count as creative but we have let it degenerate until it seems almost past reviving.

There remain the activities which exercise the body but have some other primary object. Spade, pick, axe, saw and plane are still useful tools; rowing, sailing, swimming, diving, riding, climbing are still, on occasion, life-saving accomplishments; to bring a rod of waste land into cultivation, to build a not prefabricated hut will always seem, to some at least, to outweigh excellence in any game and will give ample scope to strength and skill. Should we not, with our eyes on the ever-encroaching machines, rank these activities as high as football and perhaps even give them pride of place in the physical education of the young?

Relaxation, rest and sleep are the counterparts of activity; neither can be enjoyed in full without the other and the techniques of relaxation should be as deliberately taught as those of exertion. A vast amount of ill-health,

from early childhood on, is due to inability to unstring, let go and relax, in bed and out of it, and, though both constitution and circumstances play their part, habit and a simple failure to acquire the knack are often most to blame. Sleep requirements of individuals appear to vary enormously from infancy onwards and to insist on so many hours in bed is often beside the mark. Of far more value is to teach the child to compose himself for sleep and to do so without too much regard to his surroundings, to welcome timely somnolence and well-earned fatigue, to let go with mind and body and grasp the moment for repose as quickly and firmly as the moment for action. One who has learned to use opportunities for sleep will seldom fail to find or make them and will get enough sleep somehow. He who has learnt to relax is armed thereby against many of the common neuroses. "Sleep after toyle," says the poet, "death after life, does greatly please," and perhaps in teaching our child to lie down and sleep we may enable him, in part at least, "to dread the grave as little as his bed"—no small contribution to a healthy adult life.

BIOGRAPHICAL NOTES

LINDSEY W. BATTEN, M.B., M.R.C.P., has combined general practice with service on Pensions and Recruiting Boards and, as Assistant M.O., L.C.C., with medical inspection of school children, and experience of a Nutrition Clinic. R.A.M.C. 1915–19, mainly as regimental M.O.; Physician, Children's Hospital, Hampstead; author, *The Single-handed Mother* and *Health for the Young*.

MARGARET M. MURRAY, D.Sc.(Lond.), lecturer in Biological Chemistry at Bedford College for Women (University of London) has worked on the factors concerned in tooth development, particularly with reference to the occurrence and effects of fluorine on teeth. As Secretary of the Goitre Sub-committee of the Medical Research Council she has been investigating the distribution and causes of endemic goitre in England and Scotland.

DAGMAR C. WILSON, M.D., M.R.C.P., is an attached worker at the Institute of Social Medicine, Oxford. She was, until her marriage, a Senior Medical Officer in the Women's Medical Service, India. Subsequently she held an appointment under the Royal Society for nutritional research in India. Her war time research in this country has included investigations on fluorosis and on endemic goitre for the Medical Research Council, and work for the Lister Institute on a comparative investigation of the health of women in industry and at home.

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INDOOR STORMS

By M. MITMAN, M.D., F.R.C.P.,
Medical Superintendent, L.C.C. River Hospitals, Joyce Green.

THIS is not an account of matrimonial upheavals, but of the pollution of indoor air by invisible showers of germs expelled during sneezing and coughing and of the respiratory infections which may follow the inhalation of such disease-laden air. Pestilential air was blamed for epidemics long before germs were known to exist. Only in recent years has the study of aerobiology revealed the manner of contamination of the air and the mode of transmission of air-borne diseases.

Pathogenic germs in the air are derived, directly or remotely, from some human source. The infector may be suffering from the disease or merely carrying the germ in the upper respiratory tract. The secretions of his nose and throat are infectious, and during sneezing, coughing, laughing or even talking, showers of infectious droplets are expelled into the air. The number ejected during a vigorous sneeze lasting a tenth of a second is 20,000–100,000, mostly from the mouth, not, as one might expect, from the nose. The vast majority are invisible, but by the modern technique of flash photography many more can be demonstrated than are ordinarily visible. Some of the Ministry of Health's posters illustrating their slogan " Coughs and sneezes spread diseases " are outstanding specimens of such photographs.

The production of droplets is an example of ' atomization.' Air forced out of the lungs through the narrowed orifice of the mouth passes at high speed over the secretions of the upper respiratory passages and breaks the fluid up into droplets. The greater the velocity of the air-stream and the smaller the size of the orifice the more efficient is the process of atomization and the smaller the size of the droplets. The velocity of expulsion may be as high as 150 ft. per second. Theoretically the largest droplets may be projected for a distance of 15 ft., but most fall to the ground within two or three feet of the source. Small droplets do not reach the floor at all, but remain floating in the air, sometimes for many hours.

Air Pollution

It is chiefly such suspended particles which pollute the air with pathogenic germs, so that the factors determining their suspension are important. Size come first ; droplets smaller than one-tenth of a millimetre in diameter constitute two-thirds of those expelled, and the normal movement of air in a naturally ventilated room provides sufficient lifting force to keep them suspended. Deposition does occur, but at a geometri-

cally decreasing rate, so that 16 per cent of air-borne bacteria are still suspended eight hours after their introduction. Another factor influencing the size of suspended particles is the rapid evaporation which takes place immediately they are expelled. Within a quarter of a second most of them are no longer visible by flash photography. But they do not evaporate entirely ; a nucleus remains consisting of one or more bacteria in a small quantity of vehicle, usually a film of dried secretion and water, the thickness of which depends on the humidity of the air. These droplet nuclei measure less than a thousandth of a millimetre in diameter and are little larger than the germs they carry. They are probably more important than droplets themselves in initiating pulmonary disease.

The air is further polluted by infected dust. The minute mineral and organic particles of which dust is comprised include deposited droplets and their germs. Although desiccation kills many germs, some survive in the dust, particularly in dark and dusty corners. When dust is raised as the result of such activities as sweeping, the larger particles settle again very quickly, but the smaller ones remain suspended and contribute to the contamination of the air.

Dismal though this account may be, aerial pollution has the redeeming feature that it takes place almost entirely indoors. Out of doors contaminated air is diluted and dispersed by the wind, pathogenic germs are destroyed by sunlight and drying, and the air quickly becomes innocuous. By contrast, organisms responsible for diseases in plants can survive out of doors for long periods and be conveyed by wind over enormous distances in a short time and still be viable. Appreciation of the distinction between intramural human infections and extramural plant diseases is essential in deciding measures of control. As human respiratory infections take place mostly indoors, they should be more amenable to control than if they were spread through the air for long distances.

The Control of Air-Borne Infections

A very high proportion of the infectious diseases prevalent in this country are air-borne. Pneumonia, influenza, the common cold, measles, whooping-cough, diphtheria, tonsillitis, scarlet fever, tuberculosis, cerebrospinal fever, chicken-pox, small-pox and several others belong to this group. Together they cause more morbidity and mortality than any other type of illness. To prevent them an obvious course is to keep the air indoors as pure as possible by avoiding pollution or by disinfecting it or by replacing it as soon as it is contaminated. The measures in the order of their importance are the control of sneezing and coughing, the avoidance of over-crowding, good ventilation, adequate daylight, the control of dust, aerial disinfection.

Spitting, now an uncommon practice, once contributed materially to

aerial infection. Its infrequency to-day is evidence of the power of health education to eliminate antisocial behaviour. More recently a successful campaign has been conducted to emphasize the danger of uncontrolled sneezing and coughing. A railway passenger who tapped a fellow traveller on the nose, be it ever so gently, would be committing an offence for which he could be prosecuted ; but he may with impunity sneeze dangerous germs into the air and cause illness or death in more than one fellow passenger. In the perpetrator sneezing and coughing are physiological processes designed to remove abnormal substances such as germs from the respiratory passages. They should not be inhibited, but their danger to others must be obviated by trapping as many droplets as possible in a handkerchief of adequate size placed over the mouth and nose. The polite gesture of the hand before the mouth is totally inadequate.

Dangers of Overcrowding

Overcrowding has long been known to promote the transfer of infectious diseases. It increases the density of susceptibles and allows the ready interchange of respiratory germs. It is almost impossible to purify the air of a grossly overcrowded room or railway compartment. The oldest and simplest method of keeping air pure is to ventilate the room freely. In winter, if windows are closed, ventilation depends on natural seepage around doors and windows and is poor. To obtain a purity comparable with that of the external air would require a turnover such as could be obtained only by a wind of gale-force—an impossible condition for both comfort and health.

Air conditioning is a form of forced ventilation in which there is mechanical control of the rate of air change, humidity, temperature and freedom from suspended particles. It does not ensure the degree of purity which might be expected, particularly if the water and air used in the mechanism are recirculated for economy in running costs.

Dust control in the home is ensured by the avoidance of dust traps and the practice of damp sweeping or vacuum cleaning. In hospitals, where the control of dust is a serious problem, experiments have been conducted with dust-laying oils applied to floors and bed-clothes. The method is still experimental.

Sunlight Kills Germs

Sunlight and even diffuse daylight are known to be germicidal, and the importance of ample window space is apparent when it is realized that dust near the windows of a room is almost free from germs. Ultra-violet radiation is outside the visible spectrum, but at certain wave-lengths —around 2,650 Angstrom units—it is highly germicidal, and attempts have been made to use it for the disinfection of air. The Americans have been very successful with a simple germicidal ultra-violet lamp used to

purify the air in schools, operating theatres and waiting rooms. The method is not free from drawbacks, for dust on the lamps interferes with their efficiency, and occupants must be protected from harmful direct radiation.

In this country a modern counterpart of Lister's carbolic spray has been tried for air purification. A fine mist, a germicidal aerosol, invisible to the naked eye, is delivered by a special atomizer and disinfects the air. The chief problem has been to obtain a suitable germicide, which must be non-irritating, persistent, odourless and efficient. The substances chiefly used have been glycols and hypochlorites.

The Body's Defences

All these methods aim at reducing the bacterial load of the air, but it is gratifying to know that the body is capable of putting up a fine defence against those germs which remain and attack it. Only in a small proportion of cases is resistance overcome to an extent sufficient to allow the disease to gain a hold. The mechanism of bodily resistance to infection is highly complicated, and in the case of air-borne germs is augmented by the local resistance of the respiratory passages along which the air passes to the lungs. Infected air has first to pass through the nasal maze where it is filtered and warmed. The efficiency of the filtration is apparent to anyone who has blown his nose after being in an English fog ; large sooty particles can be seen entangled in the mucous secretion. As the air continues its passage more and more suspended particles are deposited on the sticky lining of the respiratory tract and only the finest particles of dust and droplet nuclei succeed in reaching the lungs. The physical factors concerned in deposition are complicated, but the nature of the tortuous passage, turbulence, centrifugal force, gravity and adsorption all contribute.

Some suspended particles are simply inhaled and exhaled ; most of those deposited are expelled by an effective " sweeping " process. The lining cells of the respiratory passages are provided with microscopic hair-like processes called cilia which, by their movement, sweep particles up the bronchial tree to the exterior at the surprising rate of 0.25–1 cm. per minute. The expulsion is assisted by slight muscular movements of the tree and by coughing. It is of interest to note that ciliary movements are inhibited by drying such as may occur in the excessively dry air of badly ventilated, centrally heated rooms. If particles reach the lungs they are engulfed by special " dust cells." Even when the infecting germ succeeds in passing all these barriers it has still to overcome the efficient humoral and tissue resistance of the body—a description of which cannot be given here. That many germs are capable of doing so is apparent from the list of respiratory diseases given above.

Modern Progress

Nevertheless, the last fifty years have seen an enormous decline in the incidence and mortality from respiratory diseases. Not infrequently this improvement is loosely attributed to better social conditions ; but social factors are closely interwoven, and it is difficult to assess the relative importance of poverty, malnutrition, bad housing, overcrowding, ignorance, unemployment, inadequate clothing and heating. Often factors other than social ones are involved. In diphtheria, for example, better diagnosis, antitoxin treatment and active immunization have materially contributed to the improvement. In pneumonia and cerebrospinal fever, both diseases in which social factors influence incidence, the new drugs—the sulphonamides and penicillin—have reduced the fatality considerably.

Personal and Social Hygiene

Although many factors influence the incidence and mortality from air-borne diseases, their prevention is essentially a matter of personal and social hygiene. As most of them are contracted indoors the advantages of being out of doors and of avoiding overcrowded places are obvious. Enjoyment of the fresh air, however, need not involve undue exposure to cold. Indeed, such undue exposure is a common antecedent to many of the respiratory diseases. The germs of pneumonia, for example, are carried in the upper respiratory passages of many healthy persons and produce no harmful effects until prolonged exposure to cold lowers resistance and permits the latent germs to initiate an attack of the disease. This is the sense in which people ' catch cold.' The very young and the aged must be particularly careful to keep warm out of doors. Indoors the control of sneezing and coughing, the elimination of dust, the provision of good ventilation and ample sunlight have been empirical practices which now have scientific support for their prophylactic value in air-borne diseases.

BIOGRAPHICAL NOTE

Dr. Maurice Mitman's speciality is infectious disease. He is Medical Superintendent of the River Hospitals at Joyce Green, which were used during the war as Emergency General Hospitals by the Ministry of Health. He is President of the Fever Group of the Society of Medical Officers of Health, and Examiner in Fevers for the General Nursing Council, and is joint author of a standard text book on the subject. Aerobiology has been one of his special studies, because he believes that the control of air-borne disease will be of enormous benefit to mankind.

A NEW ZEALAND HEALTH CAMP*

ALTHOUGH malnutrition in school children is largely prevented by the measure of a free milk ration, the health camp is another activity that is important to this and future generations.

In 1936 the National Federation of Health Camps stimulated the movement for the development of Health Camps throughout the Dominion. In 1937 it was announced that the National Memorial to the late King George V would be a fund for the establishment of a chain of permanent (all the year round) children's health camps. By this means the work of the health camp movement, previously confined to the erection and running of summer health holiday camps, would be rounded off. At the same time, a public appeal was inaugurated, with a preliminary donation from the Government. Public response was so great, that a total fund of £178,000 was vested in a Board of Trustees by the King George V Memorial Fund of 1938. This Board works in close collaboration with the Dominion Council of the Federation of Health Camps. The movement has so progressed that seven permanent and ten secondary camps operate.

The accompanying series of typical photographs illustrate some of the features of the Otaki Health Camp, Wellington Province, opened in 1932 and now one of the permanent camps.

School Medical Officers select the children to go to the camps, on a basis of poor physique and malnutrition, due to these conditions—chronic illness (such as asthma), a disturbance of the nervous system, insufficient hours of rest and sleep, poor housing conditions, wrong diet or over-indulgence, the after effects of an operation, or some septic condition such as decayed teeth or enlarged tonsils. Children are admitted to camp in order of the urgency of their cases.

Figures support the photographs in their illustration of health gained at a camp. In 1940, for instance, 280 boys and 657 girls went through the Otaki Camp. On admission 41·85 per cent were above the average New Zealand standard weight, but this percentage was raised to 80·8 per cent on their discharge. So, too, the admission of 58·14 per cent below the average standard weight was lessened to 19·17 per cent on discharge.

After six or more weeks in camp the child returns home. Seldom does a child need to return to a camp, and then only through some direct factor such as bad housing or lack of co-operation between child and parent in continuing the regular hours and diet of the health camp, with necessary attention to fresh air, sunshine, rest, wholesome food and sleep.

*Text and photographs (facing pages 16 and 17) kindly supplied by the New Zealand Government Offices in London.

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THE WOMAN HEALTH OFFICER

By N. GEBBIE, M.D., D.P.M., D.P.H.,
Medical Officer of Health, City of Kingston upon Hull.

"THERE is little doubt," said the late Dr. Rivers, "that when the history of the medicine of to-day comes to be written, the greatest achievement will not be found in the operative procedures, the anti-toxins and the glandular extracts which bulk so largely in the estimation of the profession and of the laity, but in the systematic development of the public health service in our own country, and the still more striking measures by which the tropical regions of the earth are being made available for the service of mankind in general."

In that systematic development of the public health service in this country the woman health officer is playing an important part and will continue to do so in the future. Indeed, as our knowledge of preventive medicine widens, her sphere of usefulness to the individual and to the community is gradually extending and her responsibilities are becoming correspondingly greater. It is important, however, that engaged as she is in the daily task of applying in practice the principles of the science of hygiene she should not fail to appreciate the rapidity with which the scope and method of her professional work are changing.

The Changing Outlook

Like her fellow workers in the public health field the woman health officer was concerned with environmental hygiene in her early days. The female sanitary inspector, as she was then called, had important if limited scope in dealing with certain problems of domestic hygiene, with the visitation of homes where minor infectious diseases had occurred and with the supervision of female outworkers.

The introduction of the school medical services in 1907, however, and the social services legislation which quickly followed, widened the activities of public health workers. There was a shift of emphasis from environmental to personal health which brought into prominence the need for women health officers to have nursing qualifications and experience and resulted in the appointment of health visitors, school nurses and tuberculosis visitors. The outstanding feature of this period was the amelioration of the social condition of the people—the 'toiling masses'—and in that beneficent work these pioneer women health officers played a conspicuous part. "Improved conditions of life have gone far to counterbalance the evils of urban life and among the influences conducing to this end the work of sanitary authorities and their sanitary officers stands high."

Gradually the attention of the public is being directed from disease to health; from pathology to physiology. The public and the medical and nursing professions are becoming less disease-minded and more health-minded. In other words, our outlook is veering towards positive health. Instead of concentrating our efforts on making the diseased healthy we public health workers are realising the importance of keeping the healthy fully efficient.

We have thus become essentially teachers of hygiene and as our horizon has expanded other workers have joined our ranks, for example, social workers, including those concerned with mental and moral health, and almoners.

A Word of Warning

With such a wide variety of activities our workers in the public health field are apt to show a tendency to specialisation, and here a word of warning will not be out of place. Specialisation appears to be an inevitable trend of this modern age in all branches of human activity. A specialist has been defined as one "who knows more and more about less and less." The best specialist is the expert who combines a high degree of technical skill in his specialty with a sound knowledge of the theory and practice of his profession. In his Harveian Oration of 1931, before the Royal College of Physicians, Sir Robert Hutchison said: "Specialism is inevitable; but though favourable to the accumulation of facts it is bad for the philosophy of knowledge. There is too little speculation and too little use of the imagination; and most scientific literature is barren in ideas." In her work as teacher of social hygiene the woman health officer must sedulously avoid such narrow specialisation.

It is obvious then that social medicine, with its roots deep into the past is no new thing. But it is only recently that it has had focused upon it the light of public opinion, both medical and lay. It was inevitable that the modern trend of thinking in terms of positive health should focus attention upon the social implications of health and disease. "It is being increasingly recognised in every branch of medicine that social, familial and industrial factors must be taken into account and appropriate trained help be involved," and we in the public health service are becoming more and more aware of present-day tendencies towards a wider outlook in the science of preventive medicine and towards a more comprehensive system of social security.

General medical practice was at first remedial in character for in those days the principles of prevention were unknown. But when the family doctor gives advice to his patient on personal hygiene, to the convalescent on how to avoid another attack of illness, and to the mother of a sick child on how to keep the other children well, he is, of course, practising preventive

medicine. The barriers between the two great branches of medicine, curative and preventive, are being broken down as our scientific knowledge of the predisposing and exciting causes of disease processes widens and deepens.

What is Social Medicin:

To these two great branches of medicine must now be added a third—social medicine. In his *Handbook of Social Medicine* Dr. F. Grundy puts the present position in proper perspective—"The boundary which separates social from preventive medicine is no better defined than that which separates preventive from curative medicine. The division is one of convenience and, broadly speaking, rests on this, that whereas preventive medicine is mainly concerned with immediate causes of clinical disease, social medicine studies remoter causes of disorder and impaired vigour. *It studies mainly those factors in the physical, industrial and family environment which influence the incidence and course of diseases or the well-being of large numbers.*"

In the *Practitioner* for September, 1943, Dr. Charles has enunciated the following cardinal principles of the instruments of social medicine outside the hospital:—

In the causation of disease "factors other than the actual morbid processes contribute to the etiology."

"Man is rarely sick to himself alone, the economic and emotional effects of his illness are transmitted to his family and dependants."

"In restoring the patient to health use must be made of the instruments of social medicine."

I think it was *The Observer* which pointed out that "For the new social medicine, new administrative methods are required—a new bottle, not an old bottle neck."

Every member of the staff of the public health and allied services must play a part in the development of social medicine. The Medical Officer of Health has travelled a long way from the 'glorified plumber' days when he was truly 'not a proper doctor.' He must teach the new social medicine outlook and must inspire his Committees so to frame their policy that in securing the well-being of large numbers of the people the physical, industrial and family environmental influences will not be forgotten.

The woman health officer also has a part to play.

Whether she be health visitor, school nurse, tuberculosis visitor, midwife, social or moral welfare worker, the woman health officer has the great advantage of starting with the preventive outlook. In her training, emphasis must have been laid upon the preventive and social aspects of her work if she is efficiently to fulfil her principal role as a teacher of hygiene. Her advice, like that of the family physician, will be of greater value and will more readily bear fruit if she is conversant with the home

and living conditions of the family and if she keeps prominently before her mind the influence of nutrition, housing, occupation, use of leisure and other social and economic factors on the physical, mental and moral state of those under her care.

Thanks to the skill and tact of the pioneer public health nurses, the antagonism to home visiting met with in the early days has long since disappeared, and the present position can be summed up in the words of the mother who in conversation with a neighbour referred to the health visitor as "not like a proper nurse, more like a friend of the family"—a tribute indeed.

Training in Social Medicine

I have referred to the importance of the preventive and social outlook in the training of public health nurses. The need for a similar development in the future training of medical students is emphasised in the Goodenough Report. The preventive and social medicine aspects should permeate all stages of the teaching of medicine.

The influence of social conditions on the maintenance of health and on the occurrence and spread of disease is becoming increasingly recognised. A high standard of physical, mental and moral health cannot be secured in the slums of our great cities and towns, in the damp neglected cottages of the agricultural labourers or in the unhygienic overcrowded crews' accommodation on certain merchant ships.

If the social conditions are unsatisfactory we are handicapped in our efforts to maintain health, to prevent the spread of disease, and to treat the sick. The standard of cleanliness, personal and environmental, cannot be raised, malnutrition cannot be avoided, and the spread of, e.g., scabies, influenza and the common cold cannot be controlled.

The woman health officer, with her preventive outlook, trained to apply modern methods of preventive medicine to the solution of the social, moral, and economic problems associated with health and disease, is destined to play an important part in the teaching of social medicine. I have indicated that the principles of social medicine will soon be incorporated in the teaching of medical students, and I hope a similar emphasis will be placed upon preventive and social measures in the future training of nurses and welfare workers.

Thus the ground would be well prepared for all agencies to combine their forces in a concerted attack upon the social evils which beset the 'toiling masses.'

The Functions of Social Medicine

Departments or Institutes of Social Medicine are being set up in various Universities in this country—the first at Oxford with Professor J. A. Ryle as professor.

These departments have three main functions:—

First, research. Our knowledge of the social aspect of the predisposing causes of certain diseases is incomplete. Social surveys are required regarding such conditions as malnutrition, rheumatism, gastric ulcer, etc. Surveys are at present being carried out at Oxford into the growth of young children; absenteeism due to sickness; and goitre incidence in certain parts of this country.

Secondly, teaching. In the case of medical students, nurses, and welfare officers emphasis should be placed upon the social and health aspects of the various problems of hygiene and of disease. Propaganda for the general public should aim at emphasising positive health, and individual instruction should be carried right into the homes of the people.

Thirdly, integration. The information obtained by social surveys will be correlated with that derived from such other sources as general medical practitioners, hospitals, clinics, etc. The Department of Social Medicine of the University will be the most suitable and convenient centre for the pooling of knowledge and the initiation of research.

As Sir A. Macnalty has recently put it "All forces, medical, environmental, social and individual must be assembled to maintain national health and to combat disease. As yet this truth is only partly realised by the medical profession and imperfectly by the public at large. In spite of the Ministry of Health, seven Government Departments, a Statutory Body (General Medical Council), and a special committee of the Privy Council (Medical Research Council), numerous voluntary bodies are concerned in the maintenance of the national health. Perhaps a wider knowledge and a deeper appreciation of the social aspects of health problems will lead, some day, to an integration of all these departmental functions."

These Institutes of Social Medicine will become the focal points for the correlation of the results of research and the centres from which will emanate the knowledge of the social implications of health and of disease. It will be our duty as workers in the social hygiene field to pass on that knowledge to the people.

Health and Planning

Housing I have already referred to. We are just beginning to appreciate the importance of the hygienic aspects of the housing of the people. The architect, the engineer, and the building contractor can give us houses, but without a true appreciation of social hygiene they cannot give us homes. When opening the Hull Corporation's 10,000th house on September 6, 1938, the late Mr. Bernays, then Parliamentary Secretary to the Ministry of Health, said: "Bricks and mortar create houses but they do not always create homes. Vast new estates of houses which have sprung up are but the bare bones of communities. They have to be clothed with services to meet

the religious, social and recreative needs of the new populations, if they are to develop into well ordered and progressive communities . . . we must strive to see that . . . they are centres of . . . happy christian home life." The woman health officer can help to turn houses into homes which will be the centres of happy healthy family life.

Industrial welfare and the rehabilitation of the sick or injured worker offer us a wide field of activity. Here we have ample scope to study the reactions of the workers to their social hygienic environment, and we can help the return of the sick or injured worker to full working and earning capacity in the shortest possible time by advice on personal hygiene and on the utilisation of measures of efficient treatment and after care.

We must bear in mind the principles of social hygiene in the re-planning and reconstruction of our cities and towns. We must press upon the authorities the importance of zoning—residential areas, industrial areas, green and semi-green belts. Reduction of densities of population and of houses in the congested areas of our cities and the establishment of community areas with community centres must be aimed at. Rapid, efficient and cheap transport of persons and of goods must be provided.

If the cost of transport of the people to and from work is too heavy and the rents of the new houses are too high, the remaining proportions of the family income available for food, clothing and the necessities of life will be insufficient and the results of our replanning and reconstruction will be disastrous. Dr. M'Gonigle, at Stockton-on-Tees, found that high rents meant insufficient nutrition.

We must help in educating the public in household management, in utilising adequately the social services, and in social hygiene. The war has necessarily slowed up our progress in public health and social medicine, but the woman health officer is ready to co-operate in securing a high standard of health and welfare for our people based on sound principles of social medicine and imbued with the spirit and outlook of positive health.

BIOGRAPHICAL NOTE

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CHILDREN WITHOUT FAMILIES

By Dorothy Burlingham.

War experience with groups of homeless children has drawn attention to the fact that young children who have to spend the first years of their childhood in groups instead of in families are exposed to disadvantages which, if not recognized and remedied, may seriously threaten their development into healthy and happy human beings. Group conditions, instead of simplifying the educational problems, as they do at some later stages of childhood, multiply difficulties and dangers in infancy, and make it hard to fulfil the individual child's needs where its physical, its intellectual, and its emotional development are concerned.

Experience of this kind, gathered in many residential and evacuated nurseries, has led to an inquiry into the conditions of development which are offered to orphans and destitute children all over the country in peace-time institutions. The hope for consequent reforms is greatest in the spheres where objective knowledge of the child's needs and requirements is soundest, and generally accepted, as in the realm of physical, and also of intellectual, development. Reform is very slow and uncertain in the realm of emotional and instinctive needs, since the relevant sources of knowledge—psychology and psycho-analysis—are not yet generally accepted as valid.

Physical Development

This position is evident in the sphere of physical care where the disadvantages which arise from congregating young children in large groups consist, above all, in an increased spread of infections. To fight this danger the responsible authorities have at their disposal the accumulated knowledge of modern medicine and hygiene. Guided by these, reform moves, or has moved, in the direction of avoidance of overcrowding, insistence on airy and sunny rooms, on playing space within and outside the house, and of all the numerous rules and regulations about proper drainage, sufficient lavatories, sufficient washing and bathing facilities, separation of flannels and towels, etc.

The same applies to the problem of feeding. Children's institutions used to offer in many instances drab, monotonous, starchy foods which, though satisfying the children's hunger, did not provide for the real needs of the body. The modern science of nutrition, with its accepted teaching about food values and vitamins, has stimulated reform in this direction, and cooking in residential institutions (as in day-schools) is moving steadily and everywhere towards the provision of a balanced and varied diet.

Clothing, though hampered in its reform by present-day scarcities, shows every sign of being changed from heaviness and drabness to the lighter and airier garments which, according to hygienic principles, allow for a healthy condition of the skin, and do not hamper movement.

With these reforms carried out, the inmates of residential institutions are very often better provided for than the children of those parents who are too ignorant to grasp the importance of the child's physical needs, or too poor to do much about it.

Intellectual Development

Reforms are slower, and more uncertain, concerning the intellectual needs of children who are deprived of family life. So far as school education is concerned, they are, of course, subject to the same regulations as all other children. Formerly, large and wealthy institutions used to provide their own schools. At present it is being recognized that this is not a wise move. Institutional children are separated from the normal life of the community, whatever happens. Their lives achieve at least a degree of normality, if they are allowed to share their school experiences with children from a normal family background.

In this respect it is important not to forget that the needs of the young child for mental stimulation are not adequately met by schooling alone, however good and progressive the school may be. In family life, children, in their close contacts with the adults of the family, and with the neighbours, have ample opportunity to see, to listen, to observe, and to share in the occupations which are in progress in their environment, and in this manner to develop their understanding, to widen their outlook, and to make use of their own growing faculties. In comparison with family life, the group life of young residential children is only too often empty, mechanized, planned according to an immovable routine, and, therefore, from the child's point of view, devoid of stimulating happenings. Careful observation of young children under group conditions has shown that their speech development is retarded if the group is too large. Similarly, these children remain ignorant to a higher age about the rules which govern life in an adult community, about the role of money, and about all the occupations and professions which are not directly concerned with the welfare of children. Their own community life, where adults are in the minority instead of in the majority, offers to their observation no normal pattern of adult behaviour and of the normal relationships between adults.

The claim for nursery-school education at pre-school age, which is being raised increasingly all over the country, has found some echo in children's institutions. Though nursery classes can do little to make up for the vivid experiences of life by which children are normally taught and

moulded, they can at least provide interesting occupation, educational toys, and free expression for the various skills of which the child is capable. Drawing and painting, modelling and building, sand and water play, music and free or rhythmical movement, may do a great deal to prevent the retardation of mental development which is to be found in institutional children whose pre-school life is kept completely barren. This introduction of nursery-school education into institutions is due directly to the growing insight into the laws which govern mental development. Though reluctantly, more and more people who are responsible for the welfare of children accept the fact that mental care has to rank equally with bodily care if grave deficiencies in the final educational results are to be avoided. Play for young children is not a luxury but a vital necessity, which prepares the way for later success in schooling.

Psychological Approach

Where an understanding of the emotional needs of the child, and the consequent different approach, is required, the difficulties seem greater and the changes more revolutionary. Whoever plans the children's life and upbringing in the institution should be guided by knowledge of the psychological requirements of the various stages of childhood. But knowledge of this kind is not widespread, and is met with disbelief in many quarters. It appears to those responsible for the welfare of the children that, if they were to recognize these forces in the child, they would find themselves governed, not by objective laws, but by the whims and fancies of infants and toddlers.

The Importance of Instinctive Wishes

Biologically, young children are instinctive beings whose behaviour is regulated by wishes which arise from the body, express themselves through the medium of the mind, and urge the individual to search for satisfaction. Many educators ignore these moving forces inside the child, or belittle the emotions which accompany them. Such an attitude is not helpful in understanding the whole process of childhood development, and leaves the children's problems and difficulties unexplained. As mentioned above, play in childhood is the forerunner of later formal learning, and of work ; in the same manner, the wishes and desires of infancy are the forerunners of the legitimate instinctive desires of the adult. Adults may ignore these instinctive urges of the children or inhibit their expressions ; but if they do so, they fail to help the children to grow into healthy and normal adults who are able to cope with the difficulties of their environment (aggression), and to develop normal emotional relationships to their fellow beings (sex).

The Importance of Pleasure

The infant shows interest in life whenever pleasure through the gratification of instinctive wishes is involved ; it remains listless and uncooperative where such pleasure is missing. In family life, where a child is not merely taken care of, but loved and treasured, the parents respond to the child's attitude in this respect. Their ideas of what is good for children may not always coincide with the child's own wishes. But their own pleasure in seeing their child happy will guide their actions, so that they provide numerous pleasurable experiences for the child, whether they know and understand about the importance of the child's instinctive urges or are in complete ignorance of them.

Not so in institutions, where provision is made impersonally and, at best, from an objective point of view. Such provision may, by a lucky chance, include pleasure, as, for instance, when the official sweet ration not only helps to build up the child's body but also satisfies its craving for a sweet taste in the mouth. But more often the objective providing for necessities completely leaves out any subjective pleasurable experience for the child, with the result that children do not gain as much from the arrangements made for them as they would otherwise. This explains why resident children so often appear ' ungrateful ' for the benefits conferred on them by an institution. They may be living in spacious houses, in sunny and airy rooms, well-laid-out gardens. It will mean little or nothing to them if they cannot use these facilities as their own wishes dictate to them : if they cannot roam about freely from room to room, take possession of favourite corners and explore possibilities, as children do in their own homes, however confined the space may be ; or if they can only use the garden for orderly walks, health-giving as these may be considered, and not for the adventurous exploits of childhood, for which even the meanest streets give ample opportunity.

This unfortunate divorce of pleasure from necessity may go right through institutional life and become one of its main characteristics. Though the needs of children are covered in this manner their wishes are neglected. Mothers, for instance, are never satisfied to dress their children merely according to utilitarian principles, important as hygiene or financial considerations may be for them. In choosing clothing they are influenced by their wish to show their child off to advantage, a desire which coincides with the child's ardent wish to exhibit itself, to be looked at and admired. In feeding the child, mothers, even though they may obey all the objective directions of the welfare clinic, are strongly influenced by the urge to give their child pleasure ; in many mothers the whole force of the mother-child relationship expresses itself in this realm. This attitude of the mother leads to a ' variation of diet,' including extras, interesting tit-bits, a sharing of the adults' food, which may be

unnecessary from a medical point of view, but which strongly influences the child's whole attitude towards eating, and can never be substituted for by impersonal feeding methods. The same point of view applies to learning. Children learn well, not merely on the basis of a normal intellectual development which is catered for by the right educational toys and a well-thought-out school plan. Their wish to acquire knowledge is decisively influenced by forces which arise out of their instinctual life and express themselves in very intimate personal wishes and desires. They learn so as to satisfy the curiosity which originates on the basis of their sex interest, and is nourished by the observation of their parents' intimate lives. They are willing to struggle with difficult school tasks, even if the subject itself is in no way pleasurable, if this holds out to them the promise to become 'big and clever' like their parents. Children also learn out of competition and rivalry, and because they want to win the praise of their parents to whom the child's achievement is a matter of urgent and personal concern.

Objective and impersonal provision for the child, even where reforms have raised it to a high level, thus leaves dissatisfied all those forces of childhood on which much of the adult's later normality depends: the child's sex interests, its curiosity and adventurousness, its pride to show off certain qualities and achievements, its power of identification with the parents, and its primitive aggressiveness which, given the right experiences, can be changed early into valuable activity and competitive ambition.

The Need for Personal Attachment

On the basis of the foregoing considerations it is evident why, from the side of child-psychology, so much stress is laid on the vital necessity of the young child's attachment to parents, or parent substitutes; why a good home life ranks so high among the requirements for normal development; why good foster-parents are considered preferable to even the best institution; and why, where institutional care is unavoidable, the demand is raised to restrict the size of groups in the early stages of childhood.

The manifold satisfactions which the parents provide make the child dependent on them for its wish-fulfilment, and thus create a close bond between parent and child. This attachment forms the child's first experience of loving somebody outside itself, an experience which remains decisive for all its later attachments. Children who miss this experience may either remain completely egoistic and lacking in emotional response or may become over-demonstrative and insatiable in their demands for love, unable to form solid and lasting relationships in later life.

The relationship between child and parents, though built up on a basis of wish-fulfilment, soon serves a very different purpose. The parents make use of the child's attachment to them to educate the child, that is to teach it slowly and laboriously to control its instincts : to become clean, to curb its aggressiveness, to restrict its greed, to do away with many of its crude and primitive urges, or to change them to the opposite (cruelty to pity, love of dirt to disgust, etc.). It is difficult for the child to give up nearly all its early pleasures, and adapt itself to the demands of the environment ; all the existing dependence on the parents, and all their love and tolerance are necessary to make the process of instinct transformation and resulting character development possible.

Good foster-parents can give this early education to the child as well as the real parents. The child will become as dependent on them as on the real parents.

Institutional Care

It is hardly possible to give an infant the necessary setting for its normal development in an institution, though the attempt to bring up small groups of children under the care of a house mother is a definite effort in this direction. Where young children are handled in large groups, it is very unlikely that any close personal attachments between children and adults will develop. The children are not handled consistently by one adult person, but by many. Where attachments develop they are broken, often inevitably, through changes of staff, etc., often unnecessarily, through breaks in the continuity of the children's lives. The routine of administration in many institutions demands that children are moved repeatedly (at the age of one year, or three years, and again at seven years) from one type of Home to the other. Each time they lose contact with the adults whom they have known, and to whom they may have formed attachments, and they lose at the same time all the possible beneficial results of such attachments.

Institutional Discipline

With the personal parent-relationship missing, the whole basis of early education is endangered and has to change its form. In intimate contact with father and mother, or their substitutes, the child can be induced to renounce instinctual pleasures, and to make spontaneous efforts to become 'good.' No such inducement, and no such compensation exists for the child who is emotionally unattached. Severity and punishment may therefore take the place of the normal give-and-take between child and parent. Such children obey, not because they want to please, but because they are afraid to do otherwise. Some become docile, apathetic and indifferent under these conditions. They conform outwardly, without, however, being able to give up many of their instinctual pleasures,

which they continue to pursue in secret. Some fall back on early types of satisfaction gained from their own bodies, as for instance, thumb-sucking, nail-biting, rocking and excessive masturbation. Whenever educational suppression is withdrawn in the outside world, children of this type immediately revert to wildness and uncontrolled behaviour. No real identification with the controlling powers has taken place which, under ordinary conditions, should lead to the building up of moral ideals and of an independent conscience.

Emotional Instability and Suggestibility

Children whose emotional responses have not developed in the intimacy of the parent-child relationship are more insecure than others in their contacts with the outer world. They are easily taken in by the first show of interest or approval offered to them by strangers, and therefore more easily than others seduced or led astray. They often lack sufficient push and initiative to make their way in the world, since they have not developed that pride in themselves and the secure confidence which human beings derive from the knowledge that their own existence is of supreme emotional importance for another person. This heightened insecurity and suggestibility, as well as a corresponding aggressiveness and lack of control, expose these children, more than others, to the dangers of an asocial, or dissocial career.

The Remedial Task of the Institution

The task of a children's institution is made infinitely more difficult by the fact that nearly all children who enter an institution have already undergone experiences which have harmed their personalities and endangered their development. The educational work of the institution should therefore, in many cases, be a remedial one. This needs insight into the children's abnormalities, understanding of the ways in which they originated, and in which certain behaviour problems which have been produced by past experiences repeat themselves invariably in the new surroundings. The re-education which these children need makes great demands on the people who handle them, not only on their good will, sympathy and affection, but equally on the psychological and educational training and knowledge which should be their indispensable equipment.

BIOGRAPHICAL NOTE

DOROTHY TIFFANY-BURLINGHAM, born 1891 in New York, studied psychoanalysis in Vienna 1930-1933, practising psycho-analyst and child-analyst in Vienna, from 1938 in London. Co-organizer of Hampstead Nurseries, 1940-1945. Co-author of *Young Children in War-Time, Infants Without Families*, George Allen & Unwin, London.

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DIFFICULTIES IN SEX EDUCATION

By Austin J. Hawkes, M.A.

Although there is fairly general agreement among educationists on the need for some kind of instruction in sex knowledge and hygiene, the exact form this instruction should take is not so certain. In many schools the sole approach is through biology, but unless this is direct, as suggested by M. H. Bennett in her article on "Sex Beliefs and Behaviour,"* the results may be of doubtful value. I have met many boys to whom 'sex' meant human beings; rabbits were 'biology.' However, it is clear that the biological approach is a valuable, if not the only, one.

Teachers cannot spend much of their time teaching 'sex hygiene.' Their job—I agree that this is unfortunate—is to teach the subjects for which they are employed. But no teacher can teach in a vacuum. He is always a person talking to persons and his words and point of view reach out far beyond his defined curriculum. To teach his subject he must teach his class and that implies an effort to understand them. It is here that every teacher may, indeed must, assist in helping to solve the problem of sex education.

All teachers are aware of the varied force with which the adolescent stage reacts on the pupils. Most boys pass through this period with perhaps no more than a mild pornographic interest in sex, with the collection of a few smutty stories and a mass of quite erroneous information. Erroneous information can be corrected through the biological approach, though not necessarily made less capable of smut-interpretation. Very little can be done about that side of the problem until the whole social attitude to sex in the adult world is changed.

Unreal Idealism

It is, however, important to consider the reaction of those boys who, because of their temperament and home training, find the behaviour and interests of many of their fellows repellent and disgusting. Often some organised religious creed has made a special appeal to these boys and sex is readily equated with sin, and the boy often develops a form of idealism towards the opposite sex which is peculiarly persistent. I believe this to be one of the roots of that state of mind which places woman on an unreal pedestal. The boy who is emotionally revolted by the preoccupation shown by his fellows with half-understood sex problems and is yet aware of the physical and emotional changes taking place within himself, quickly tries to achieve his equilibrium by the elevation of

* Health Education Journal 1945, 3, 84.

woman to the realms of purity and holiness. The problem is age-old but the solution becomes ever more urgent. The persistence of this attitude throughout adolescence and beyond is dangerous to the individual and society because it rests on a false basis and the results may be disastrous in at least two ways.

In the first place, the maintaining of the idealist attitude towards women will demand constant readjustment—on an unreal basis—of the other sides of the personality. It is a very short step from the identification of a powerful force within oneself with beauty, purity, etc., in the other sex, to a distrust of any point of view which is worldly. The attraction of a particular religious creed may weaken and the idealist attitude persist without the formal religious support.

It is among such people that we may find distrust of any scientific attitude towards social and personal problems. Their own attitude is fundamentally irrational and in constant danger of being undermined. It can only be preserved by building the ivory tower of emotional privacy even higher. The dangers confronting such an adult in choosing a wife are obvious. There is a good deal of difference between the man who feels the emotional exhilaration of love and the one who finds in the woman the incarnation of his own idealism.

Economic and Social Effects of Exaggerated Idealism

The second danger is a corollary to the first and plays its part in the economic position of woman in society. It is hopeless to look forward to a world in which women will be partners with men if the basis of their personal relationship is corrupted from the beginning. There are jobs in society which women cannot do because of their physical ability and perhaps their emotional make-up. The same applies to men. But there must be no jobs in society from which women are precluded because they are incarnations of some men's idealism. The temptation for unscrupulous authority to encourage this attitude for ulterior motives is very great. The 'children, kitchen, church' view of women so characteristic of Nazism is generally an acid test of a decadent civilisation.

If we remember that we are teaching and educating human beings to live in a society, we will go a long way towards solving one of the difficulties in sex education. Our vital need is for new personal relations between the sexes, but such relations can only function properly in a new society. That society is being created day by day. By all means let us have a biological explanation and the scientific approach, but we cannot just roll the burden on to the shoulders of the biologist. Sex education strives to achieve a knowledge of facts; but not only this. The wider aim is that of all education—the co-ordination of knowledge in the interests of the whole personality.

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THE IMPORTANCE OF WATER

By Margaret M. Murray, D.Sc.(Lond.), *Lecturer in Biological Chemistry, Bedford College for Women, University of London*
and
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A health problem of considerable importance in post-war reconstruction is the influence of water supply on health and nutrition. Knowledge of the social implications of different types of water supply and of the influence on health and nutrition of its mineral contents is necessary in order to make adequate provision for communal welfare. Of all the substances necessary for existence, water ranks second only to oxygen in importance; without water life is not possible. The body of an adult contains about 72 per cent of water; that of a young child considerably more. For a man to remain efficient and in 'water balance,' he must be supplied with enough water to replace the large amounts he loses through the lungs, kidney, and skin.

The importance of a proper water supply has been recognised in the Public Health Act of 1936, by which Local Authorities are bound to ensure that every dwelling has a sufficient supply of wholesome water. The provision of an adequate water supply is a matter of team work. The question of quantity is one for the water engineer: in country districts five gallons per day per head may be regarded as a minimum requirement, in towns the quantity required depends on different urban activities. The bacteriologist and analyst are concerned with water purification and with softening installations and the prevention of action on mains and pipes. It remains for the doctor and social worker, interested in the promotion of well-being, to deal with the influence of the water supply on health and nutrition.

Importance of Mineral Contents

Until recently, apart from the purposes of trade and manufacture, little importance was attached to the positive health value of the mineral content of water supplies. But the exigencies of war service have necessitated research on mineral metabolism, the results of which are now available, and have increased our knowledge of the laws which govern the absorption and excretion of certain minerals present in many waters. The health implications of a wholesome water supply extend beyond the elimination of the

dangers of inorganic and organic substances likely to cause alimentary derangement or indicative of contamination by specific organisms leading to intestinal disease, to the promotion of health by ensuring the right mineral content of domestic supplies. That is to say, drinking water must be regarded as a nutrient, and in future water analysts must become interested in the assessment therein of certain elements of physiological importance such as calcium, magnesium, iodine and fluorine.

Source of Water Supplies

Before 1850, drinking water in English towns was largely obtained from wells, many of which were liable to contamination by surface drainage. In London there were many water companies, but many of the supplies were often of questionable purity. *Punch*, in 1851 (Vol. 20), remarks on the rarity of a glass of London water fit to drink, an observation confirmed by the frequency of cholera epidemics between 1847 and 1865. The scientific control of London water dates from 1902, when the Metropolitan Water Board bought up all existing water companies.

Three-quarters of the population of England and Wales is supplied with water from rivers and streams; the remaining one-quarter from wells and borings into water-bearing strata. With further housing and industrial development, the demand for water is increasing; while, owing to the inadequacy of underground supplies, there is greater resort to surface sources such as rivers. This has become possible by improved methods of purification, chlorination and mechanical filtration, and the provision of softening installations to prevent wastage of labour and materials. Such methods may in the future make possible the use of the millions of gallons of water from the coal measures, which are at present pumped to waste.

Pollution

Difficulties arising from the disposal of the waste and drainage of war factories have emphasised the importance of regular inspection of each water source, its location and environment in both wet and dry weather, and the character of the population in the drainage area. Knowledge of geology is necessary in order to locate points at which impurities may gain access to the water and perhaps later be detrimental to the health of inhabitants of towns a long distance away. In rural areas the drainage from every cottage should be examined in order to find out what ultimately becomes of the sewage. In the case of subsoil water supplies, note should be taken of how wells are constructed and covered and of the area of water depression caused by pumping. In deep wells, bored through impermeable strata to water-bearing rocks beneath, pollution often occurs near the surface or, if the outcrop is at no great distance, the possibility of pollution is there.

The Geological Survey provides information about underground sources

of water—how much can be obtained and at what depth—and to some extent provides advice as to its quality. Once such water is obtained, what happens to it is the concern of the Ministry of Health and the Local Authorities. To maintain bacteriological purity, repeated examinations are required, and it is always necessary to know the derivation of a water supply so that ammonia and organic matter from harmless sources may be distinguished from serious pollution.

It is desirable that the water supplied should not be too hard for domestic use. Classified according to the amount of soap required to make a lather, there is no sharp line of demarcation between hard and soft waters; but water with under 5 parts per 100,000 parts of hardness is considered definitely soft, and over 20 parts, hard. On boiling, the bicarbonates of calcium and magnesium forming the temporary hardness are thrown out of the solution as carbonates, because of loss of carbon dioxide. The remaining permanent hardness is usually due to the sulphates of these metals, but occasionally also to the presence of chlorides and nitrates. The most abundant springs, many of them hard waters, are in the Chalk, Oolite, New Red Sandstone, Millstone Grit and Carboniferous Limestone. Soft waters are obtained from upland sources, and also from Cambrian, Silurian and Devonian slates and from some of the sandstones.

Nutrient Value of Minerals

In judging the wholesomeness of a water, one must also take into account the nutrient value of its mineral constituents. Natural waters contain in widely varying amounts many inorganic substances necessary for human nutrition —for example, salts of calcium, magnesium, sodium, potassium, iron and manganese. Some of these are liberally supplied in the diet, but in respect of others water may be an important source. We do not yet know the significance of occasional traces in water of other substances such as silica, molybdenum and rarer elements.

The small quantities of zinc and copper, which come from the action on pipes of acid waters (of pH4–5 and under), are never present in harmful amount. Arsenic and lead, which are toxic to human beings, may occasionally reach supplies from waters draining mines, from the action of moorland peat waters on lead and galvanised iron pipes, or from industrial waste.

The health aspects of three substances present in water—calcium, iodine and fluorine—have recently been the subject of much discussion. Before the war we relied on dairy foods, especially milk and cheese, for a calcium intake sufficient for growth and maintenance. At present there is not enough milk to supply the population of the world with its calcium requirements, so that the amount of calcium in drinking waters assumes great importance. It has been calculated that as much calcium (200 mg) per day may be obtained from drinking hard waters as was contained in the adult milk

ration during the winter months of 1942 and 1943. The cooking of vegetables in hard water also makes a small addition to the total calcium intake.

Full consideration has been given in recent years to the calcifying properties of infants' diets, so that florid rickets is rarely encountered. But the growing child is also extremely vulnerable to calcium deficiency, one of the signs of which is poor calcification of the permanent teeth, so often seen in areas where the water is very soft or when for various reasons the supplementary milk ration has not been fully utilised. Such teeth present a problem to the dental surgeon, and one finds in such areas many with artificial dentures in the early twenties. It is therefore a point of great importance to strike a balance between having a water which is too soft from the nutritional point of view and one which is too hard from the domestic or trade point of view. In these days of planning for new standards, one should be set for the optimum hardness of water.

Now, while the calcium and hardness of water are measured in parts per 100 thousand, the important element iodine is measured in parts per 1,000 million, and yet many waters do not contain enough for normal requirements. Deficient absorption of iodine is a direct cause of enlargement of the thyroid gland. Wherever goitre is endemic, the iodine content of the water is low. Waters from the earlier geological formations and from limestone rocks are often low in iodine, and in such areas goitre will be endemic if the supply and consumption of sea fish is inadequate to make up the iodine requirement. Many English inland villages, where sea fish is virtually unobtainable, have a history of endemic goitre, and the present occurrence of thyroid enlargement has prompted the Medical Research Council to advise the use of iodised salt. Some waters have been encountered which have very high iodine contents, so that a pooling of water supplies might be considered in some localities.

In the United States, the Public Health Services are studying in their post-war programmes the significance of fluorine in dental health. Fluorine occurs in very low concentrations in many waters, and in a few to an extent which is definitely deleterious. Too much fluorine in the water produces severely mottled teeth, which are often badly stained and constitute a disfigurement as well as a dental problem, but fluorine appears to be anomalous in that it is recognised in the U.S.A. that a small amount (under 1 part per million) is probably favourable to the inhibition of dental caries in adolescence. Fluorine is present in many English waters and it would be possible by using more than one source to adjust correctly the fluorine content.

Future Developments

The Water Act, which received the Royal Assent in June 1935, for the first time imposes on the Minister of Health the duty of promoting the

provision of an adequate water supply fit for all the reasonable needs of householders. It is a matter for consideration whether, after the war, water from different sources could not profitably be supplied suitably mixed to meet health and nutrition requirements. But such adjustment of water supply is not in itself sufficient for the well-being of society. It is necessary also to consider within any community the social reasons which prevent the proper utilisation of the water supply. This should, of course, be part of the wider study of how human health and efficiency varies with man's social environment, which is a field in which doctors and social workers could with advantage work more closely together. Such enquiry should include an assessment of the conditions under which an individual has to live and work, and the study of health and the conditions necessary for its maintenance.

A COUNTY EXPERIMENT IN HEALTH EDUCATION

As part of the Boston (Lincs.) "Thanksgiving Week," the Public Health Department of Holland County Council provided a stand designed to make better known the County Council Health Services. This met with immediate success, and details of some of the publicity material should be of interest and help to other local authorities who may have a similar opportunity for making known their services. Cooperation was given by the Laboratory Service, which provided specimens of good and bad water, tubercle and diphtheria germs, and of the germs spread by flies, mice, rats, etc. The Orthopaedic Block provided appliances and casts, an X-ray view box, and the Gas and Air apparatus used by the County Midwives. Graphs showed the mortality rates from cancer and tuberculosis, the infant mortality rate and the local diphtheria immunization figures. Leaflets were provided dealing with the County Health Services, the Central Council for Health Education pamphlets and booklets on all subjects were available, and films were also shown. A survey of the interest created amongst those visiting the stand elicited the following information:

Men were most interested in the Laboratory specimens and the Orthopaedic and X-ray exhibits.

Women, particularly young mothers, showed the greatest interest in infant welfare, infectious diseases, and the Gas and Air apparatus.

The older women were particularly interested in the Central Council for Health Education booklets *Care of the Feet* and *Be Kind to Your Stomach*.

The children evinced particularly great interest in the subject of teeth.

The Public Health Department of the Holland County Council is to be congratulated on its successful efforts to make its services more widely known. The Central Council for Health Education hopes to be of increasing assistance to local authorities wishing to stage exhibitions and will welcome inquiries and suggestions.

NEW FILMS ON CHILDREN'S HEALTH

The Central Council for Health Education has now added to its film library three films recently produced for the Departments of Health and the Central Council and Scottish Council for Health Education by the Ministry of Information.

Medical Officers of Health and Directors of Education may borrow these films direct from the Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1. The Central Council will be glad also to make arrangements for the showing of the films.

These films are intended particularly for parents and will be of interest to all who have charge of children. They should also appeal to older secondary school children. They embody sufficient elementary physiology to explain the structure and working of the organs concerned and to show why certain simple health precautions are important. Diagrams are used in each film to present the principles of structure, and the health information is made attractive and easy to grasp.

YOUR CHILDREN'S EYES. 16 mm. and 35 mm., sound. 19 minutes.

Structure of the eyes and how they work. Structural defects and how they should be treated; long and short sight, astigmatism and squint. How to treat common eye diseases; conjunctivitis, styes. Daily care of the eyes; importance of good general health and avoidance of eye strain.

YOUR CHILDREN'S EARS. 16 mm. and 35 mm., sound. 15 minutes.

Deafness in most children can be prevented. How the ear works and how deafness is caused. Abscesses, colds, discharge, adenoids; and what action mothers should take.

YOUR CHILDREN'S TEETH. 16 mm. and 35 mm., sound. 14 minutes.

Structure of the teeth and how they grow. Importance of ante-natal care and of proper food. Effects of decay on health, and how it can be prevented; proper diet; regular cleaning; regular inspection and treatment.

NOTE ON THE USE OF THESE FILMS

All three films are very similar in style and method and, in the case of an organization which meets regularly, the most effective use would be to show one at each of three successive meetings, along with other films, so as to avoid any danger of overloading the programme with material of one kind. Where this arrangement is not possible, and it is desired to show all three films on one occasion, they should be separated by pauses, during which questions might be answered and discussion encouraged.

Scottish inquirers should communicate with the Scottish Council for Health Education, 3, Castle Street, Edinburgh, 2.

REVIEWS

How to be Healthy—and Wiser, by Mary E. R. Sutherland, M.A., B.Sc., Diploma in Education. (Stanhope Press, Rochester. Pp.79, Price 2s. 6d.)

This small book with its delightful photographs, though written primarily for Girl Guides, and especially Rangers, would make instructive reading for any adolescents or young adults.

The descriptions of the physiology of respiration, digestion, reproduction, etc., are excellent and the drawings fully explanatory.

The style throughout is simple, easy and in a conversational manner, which makes for ready understanding of the wealth of material presented so clearly, briefly and yet in such a way that there are few readers who will not be stimulated to undertake further study of the body's activities and the maintenance of its health. J. E. D.

First Year Out (The Diary of a Special School Teacher), by Margaret Halden. (Nelson. 1943. Pp. 108, with 6 figures. Price 6s.)

The authoress of this book shows a keen observation with an unbridled sense of humour. The book provides light reading and gives humorous character sketches of the staff and pupils in an evacuated school for children of subnormal mentality. The gibes cast at the expense of these poor unfortunate beings do not produce the reaction in the mind of a serious reader which the authoress apparently intended, while the character studies of the staff are superficial and unfriendly. Miss Haldane is, no doubt, a young and enthusiastic student, but she misses the spirit of work among afflicted children who are seeking vaguely and vainly to align themselves with normal conditions of life. One notes a sense of subjective satisfaction which is probably born of youthful inexperience.—F. A. O.

Children Without Homes, by Women's Group on Public Welfare. (National Council of Social Service. 1945. Pp. 37. Price 2s.)

We congratulate the Women's Group on Public Welfare on this interesting report of the proceedings of a conference recently convened by them in London.

The papers, all by experts in their own field, deal with many aspects of the care of the homeless child, from the existing administrative background and the modifications it requires to the qualities and training necessary for staff.

One most valuable suggestion is that of the establishment of reception or allocation centres for all homeless children.—V. D. S.

Getting to Know Your Baby, by D. W. Winnicott, F.R.C.P. (Wm. Heinemann Medical Books Ltd. 1945. Pp. 27. Price 1s.)

This booklet brings to the fore the all-important emotional relationship between mother and child—an aspect often neglected by the paediatrician. However, one wonders how the mother will correlate the gypsy methods of feeding suggested by the writer with the advice she receives at the infant welfare clinic. Nevertheless, there is fruitful reading for the parent with discrimination.—J. D.

Aptitude Aux Sports et Control Medical, by P. Chailley-Bert. (Bailliere et fils. Paris. 1943. Pp. 119.)

This book is in three main parts. The first deals with young people's aptitude for various sports and with the conditions of award of "Certificats sportifs" to them; the second deals with the effect of different sports on the organs of the body, and the third consists of articles about eleven different games by experts.—M. S.